UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,966	04/02/2004	Yoshitsugu Morita	501558.20015	1690

26418 7590 08/05/2008

REED SMITH, LLP
ATTN: PATENT RECORDS DEPARTMENT
599 LEXINGTON AVENUE, 29TH FLOOR
NEW YORK, NY 10022-7650

EXAMINER	
FIDLER, SHELBY LEE	
ART UNIT	**PAPER NUMBER**
2861	
MAIL DATE	**DELIVERY MODE**
08/05/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/816,966	MORITA, YOSHITSUGU	
	Examiner	Art Unit	
	SHELBY FIDLER	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) *25-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-9,12-19 and 21-24* is/are rejected.

7)☒ Claim(s) *3,10,11,20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Responsive Office Action

This Office Action is responsive to the remarks filed 4/28/2008.

Claim Objections

Claim 10 is objected to because of the following informalities: please change "angle" (line 4 of the claim) to "angles," to place the claim in proper sentence format. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Childers (US 6116723).

Regarding claim 1:

Childers discloses an ink cartridge comprising:

an ink accommodating bag (inner bag 134) in which ink is accommodated (col. 5, lines 34-37) and that is formed of a first flexible sheet (col. 4, lines 26-30);

an outer bag (outer bag 162) that is formed of a second flexible sheet (col. 5, lines 53-54) and that encloses the ink accommodating bag (Fig. 7A) such that a first space (pressure volume 28) is defined by and between the ink accommodating bag and the outer bag (Fig. 7A);

an ink delivering member (chassis 158) including a fixing portion (outer keel portion 161), to which the outer bag is fixed at an opening thereof (col. 5, lines 19-24 & Fig. 7A), and an extending portion (inner keel portion 159) that is formed adjacent to the fixing portion so as to extend toward an inside of the outer bag in a first direction of the fixing portion (Fig. 7A) and to which the ink accommodating bag is fixed at an opening thereof (col. 5, lines 14-19 & Fig. 7A); and

a rigid casing (housing 164) that encloses the outer bag and the ink accommodating bag (Fig. 7A) such that a second space is defined by and between the outer bag and the rigid casing (Fig. 7A) and that holds the ink delivering member (Fig. 7A);

wherein the ink delivering member further includes an ink outlet passage (passage extending through fluid port 163) through which the ink in the ink accommodating bag is delivered to an exterior of the ink cartridge (col. 5, lines 37-40) and a communication passage (passage extending through fluid port 165) through which the first space is held in communication with the exterior of the ink cartridge (col. 5, lines 37-40).

Regarding claim 2:

Childers discloses all the limitations of claim 1, and also that the communication passage (165) is formed at least in a state in which the outer bag is fixed to the fixing portion (Fig. 7A) and includes at least a portion that extends in a direction that intersects the first direction of the fixing portion (e.g. portions of valve shown in Fig. 5), the fixing portion having at least one seal portion (col. 5, lines 49-53) formed on an outer surface thereof that continuously extends throughout a periphery of the fixing portion (Figs. 7A-B).

Regarding claim 4:

Childers discloses all the limitations of claim 1, and also that the fixing portion (161) has a cross sectional area larger than a cross sectional area of the extending portion (159), where the cross sectional areas of the fixing portion and the extending portion are taken along respective planes perpendicular to the first direction of the fixing portion (col. 5, lines 24-30 & Fig. 7B).

Regarding claim 5:

Childers discloses all the limitations of claim 1, and also that the fixing portion (161) has a circular shape in cross section taken along a plane perpendicular to the first direction of the fixing portion (Fig. 7B).

Regarding claim 6:

Childers discloses all the limitations of claim 1, and also that the outer bag (162) includes a pair of walls that are opposed to each other in a second direction perpendicular to the first direction of the fixing portion (Fig. 7A).

Regarding claim 9:

Childers discloses all the limitations of claim 1, and also that the communication passage (165) is in the form of a labyrinth having at least one bent portion (via valve shown in Fig. 6).

Regarding claim 13:

Childers discloses all the limitations of claim 6, and also that the communication passage (165) is formed on one of opposite sides of a plane of the fixing portion (Fig. 7A), the plane including a connected surface (col. 5, lines 49-55) at which the pair of walls of the outer bag are connected (Fig. 7A).

Regarding claim 14:

Childers discloses all the limitations of claim 6, and also that the communication passage (165) is formed on both of opposite sides of a plane of the fixing portion (e.g. a plane slicing the fluid port 165 in half vertically) so as to extend in series (Figs. 6 & 7A), the plane including a connected surface at which the pair of walls of the outer bag are connected (Fig. 7A).

Regarding claim 16:

Childers discloses all the limitations of claim 1, and also that each of the first and second flexible sheets is provided by a material that substantially inhibits gases or vapors from permeating therethrough (col. 5, lines 14-24).

Regarding claim 17:

Childers discloses all the limitations of claim 1, and also that the ink delivering member (158) has a rigidity higher than the first and second flexible sheets (inherent to col. 5, lines 49-53).

Regarding claim 18:

Childers discloses all the limitations of claim 1, and also that the ink delivering member (158) further includes a hollow protruding portion (hollow portion of port 165) that protrudes from the fixing portion so as to extend in a direction away from the outer bag (Fig. 7A), and that has an inner passage formed therethrough (Fig. 7A), the communication passage that is formed on the fixing portion communicating at one of opposite ends thereof with the first space defined by and between the ink accommodating bag and the outer bag (Fig. 7A) and at the other end of the opposite ends with the inner passage of the hollow protruding portion (Fig. 7A).

Regarding claim 19:

Childers discloses all the limitations of claim 18, and also that the fixing portion (161) has a connecting passage that connects the other of the opposite ends of the communication passage and one of opposite ends of the inner passage of the hollow protruding portion that is located on the side nearer to the fixing portion (Fig. 7A).

Regarding claim 21:

Childers discloses all the limitations of claim 18, and also that the ink delivering member (158) includes a cylindrical portion (port 163) that is formed adjacent to the fixing portion (Fig. 7B) so as to extend therefrom in a direction away from the outer bag (Fig. 7A), the ink outlet passage being formed through the cylindrical portion, the fixing portion, and the extending portion (col. 5, lines 34-40 & Fig. 7A), one of opposite openings of the cylindrical portion that is remote from the fixing portion and one of

opposite ends of the hollow protruding portion that is remote from the fixing portion being on a same plane (Fig. 7A).

Regarding claim 22:

Childers discloses all the limitations of claim 1, and also that the ink cartridge is removably mounted on a main portion of an ink-jet recording apparatus (Fig. 1) that includes an ink-jet printing head (printhead 14), and ink supply passage (fluid conduit 18) for supplying the ink delivered from the ink cartridge to the ink-jet printing head (Fig. 1), a positive pressure generating source (pressure source 16) for generating positively pressurized air (col. 2, lines 36-41), and a positively pressurized air delivering passage (pressure conduit 22) through which the positively pressurized air generated by the positive pressure generating source is delivered (Fig. 1), the ink cartridge being constructed to be removably mounted on the main portion such that the ink outlet passage of the ink cartridge is connected to the ink supply passage of the main portion while the communication passage of the ink cartridge is connected to the positively pressurized air delivering passage (Fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7, 8, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Childers (US 6116723) in view of Perkins et al. (US 6715864 B2).

Regarding claim 7:

Childers discloses all the limitations of claim 6, and also discloses that the fixing portion (161) has a first dimension as measured in the first direction (vertical axis of Fig. 7A), a second dimension as measured in the second direction (axis extending through the page of Fig. 7A), and a third dimension as measured in a third direction (horizontal axis of Fig. 7A) which is perpendicular to the first direction and the second direction (Fig. 7A).

Childers does not expressly disclose that the third dimension is larger than the first dimension and the second dimension.

However, Perkins et al. disclose an ink cartridge comprising a fixing portion (fitting 18), wherein the fixing portion has a first dimension (dimension extending along the line of assembly shown in Fig. 2), a second dimension (dimension extending from top-to-bottom of fitting 18 as shown in Fig. 2), and a third dimension (dimension extending from left-to-right of fitting 18 as shown in Fig. 2), wherein the third dimension is larger than the first and second dimensions (Fig. 2).

Therefore, at the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Childers' fixing portion to have the configuration disclosed by Perkins et al. One motivation for doing so, as taught by Perkins et al., is to provide a fixing portion that creates a leak-proof seal between the bag and the fitting (col. 2, lines 36-40).

Regarding claim 8:

Childers as modified by Perkins et al. discloses all the limitations of claim 7, and **Perkins et al. also disclose** that the second dimension of the fixing portion gradually decreases toward opposite ends thereof in the third direction (Fig. 2).

Regarding claim 12:

Childers discloses all the limitations of claim 9, but **Childers does not expressly disclose** that the fixing portion includes a plurality of elongate ribs.

However, Perkins et al. disclose an ink cartridge comprising a fixing portion (fitting 18), wherein the fixing portion includes a plurality of elongate ribs (28) formed on the outer surface thereof (Fig. 2) and at least one groove (sections between adjacent ribs 28), each of which is located between adjacent two of the plurality of ribs (Fig. 2), at least one of the plurality of elongate ribs being formed with an elongate cutout such that the elongate cutout extends in a longitudinal direction of the at least one of the plurality of elongate ribs (Fig. 2), and with two grooves extending from the longitudinal opposite ends of the elongate cutout to one and the other of opposite side surfaces of the at least one of the plurality of elongate ribs, respectively (both the ribs 28 and the grooves extend across the length of the fitting 18 as shown in Fig. 2).

Therefore, at the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Childers' fixing portion to have the configuration disclosed by Perkins et al. One motivation for doing so, as taught by Perkins et al., is to provide a leak-proof seal between the bag and the fitting (col. 2, lines 36-40).

Claim 15 is rejected under 35 U.S.C. 103(a) as being obvious over Childers (US 6116723) in view of Presnick (US 3730240).

Regarding claim 15:

Childers discloses all the limitations of claim 1, and also that the ink cartridge comprises a sealing member (piston of poppet valve 91 – Fig. 6) that is removably provided (removable from a certain position) so as to close the communication passage (inherent to operation of the valve shown in Fig. 6).

Childers does not expressly disclose that the first space is in a state, upon shipment of the ink cartridge, in which the first space is evacuated to a reduced pressure.

Examiner notes that Childers' undisclosed limitation does not provide any additional structure to the ink cartridge, and that Childers' ink cartridge is capable of being placed in such a condition.

Further, Presnick discloses an ink cartridge in which, upon shipment of the ink cartridge, a first space is evacuated to a reduced pressure (col. 2, lines 35-38), the ink cartridge comprising a sealing member (stopper member 15') that is removably provided so as to close the communication passage (col. 2, lines 41-44 & Fig. 1).

Therefore, at the time of invention, it would have been obvious to a person of ordinary skill in the art to reduce the pressure of Childers' first space, such as suggested by Presnick, during shipment of the ink cartridge. One motivation for doing so, as taught by Presnick, is to utilize the insulating characteristics of dead air space during shipment (col. 1, lines 12-16).

Regarding claim 23:

Childers discloses an ink cartridge comprising:

an ink accommodating bag (inner bag 134) in which ink is accommodated (col. 5, lines 34-37) and that is formed of a first flexible sheet (col. 4, lines 26-30);

an outer bag (outer bag 162) that is formed of a second flexible sheet (col. 5, lines 53-54) and that encloses the ink accommodating bag (Fig. 7A) such that a first space (pressure volume 28) is defined by and between the ink accommodating bag and the outer bag (Fig. 7A);

an ink delivering member (chassis 158) including a fixing portion (outer keel portion 161), to which the outer bag is fixed at an opening thereof (col. 5, lines 19-24 & Fig. 7A), and an extending portion (inner keel portion 159) that is formed adjacent to the fixing portion so as to extend toward an inside of the outer bag in a first direction of the fixing portion (Fig. 7A) and to which the ink accommodating bag is fixed at an opening thereof (col. 5, lines 14-19 & Fig. 7A); and

a rigid casing (housing 164) that encloses the outer bag and the ink accommodating bag (Fig. 7A) such that a second space is defined by and between the outer bag and the rigid casing (Fig. 7A) and that holds the ink delivering member (Fig. 7A);

wherein the ink delivering member further includes an ink outlet passage (passage extending through fluid port 163) through which the ink in the ink accommodating bag is delivered to an exterior of the ink cartridge (col. 5, lines 37-40).

Childers does not expressly disclose that the first space is in a state, upon shipment of the ink cartridge, in which the first space is evacuated to a reduced pressure.

Examiner notes that this limitation does not provide any additional structure to the ink cartridge, and that Childers' ink cartridge is capable of being placed in such a condition.

However, Presnick discloses an ink cartridge in which, upon shipment of the ink cartridge, a first space is evacuated to a reduced pressure (col. 2, lines 35-38).

Therefore, at the time of invention, it would have been obvious to a person of ordinary skill in the art to reduce the pressure of Childers' first space, such as suggested by Presnick, during shipment of the ink cartridge. One motivation for doing so, as taught by Presnick, is to utilize the insulating characteristics of dead air space during shipment (col. 1, lines 12-16).

Regarding claim 24:

Childers as modified by Presnick discloses all the limitations of claim 23, and Childers also discloses that the ink delivering member (158) has a rigidity higher than the first and second flexible sheets (inherent to col. 5, lines 49-53).

Allowable Subject Matter

Claims 3, 10, 11, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Please see the Office Action dated 5/24/2007 concerning reasons for indicating allowable subject matter for claims 3, 10, and 11.

Claim 20 contains allowable subject matter since the prior art of record does not disclose, suggest, or make obvious an ink cartridge comprising a connecting passage that includes a first portion that extends in the first direction of the fixing portion and a second portion that extends from the first portion in a direction intersecting the first direction. It is these limitations, in combination with other features and limitations of claim 20, that makes this claim allowable over the prior art of record.

Response to Arguments

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection. Please see the above anticipation rejection based on the disclosure provided by Childers.

Examiner notes that Applicant's most recent arguments were not found persuasive. However, upon completing an updated search, Examiner has decided to install a new grounds of rejection in effort to advance prosecution by utilizing the most relevant prior art.

Communication with the USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHELBY FIDLER whose telephone number is (571)272-8455. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LUU MATTHEW/
Supervisory Patent Examiner, Art Unit 2861

/Shelby Fidler/
Patent Examiner
AU 2861